

Hughes (Chas. H.)

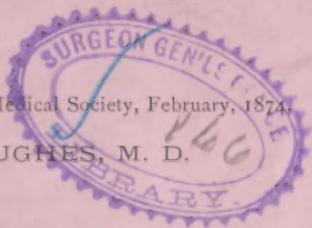
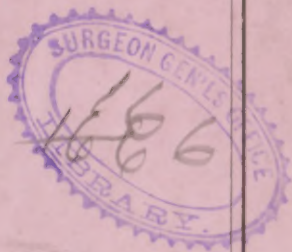
THE
HEREDITARY
Insane Neuroses,
OR,
NEUROSES SPASMODICA,

With Illustrative Cases.

A Paper read before the St. Louis Medical Society, February, 1874.

By CHAS. H. HUGHES, M. D.

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THE
HEREDITARY INSANE NEUROSES,

—OR,—

NEUROSES SPASMODICA,

WITH ILLUSTRATIVE CASES.*

Within a recent period I have seen, in consultation with medical gentlemen of this city, several cases connected with the *neurosis spasmodica*, presenting features quite in common and sufficiently characteristic of the intimate pathological relationship between epileptoid seizures and the transmitted neurosis of insanity and epilepsy, to be worthy of report. One of the cases serves in an especial manner to reveal the protean and transitional character of the symptoms of *le petit mal*. So masked have been the symptoms of some forms of epileptiform disorder encountered, that I have not been able to diagnose the disease from the symptoms existing in the patient himself at the time of examina-

*Read before St. Louis Medical Society.

tion, and have only arrived at a correct comprehension of the true nature of the case after getting the patient's whole history from earliest infancy, together with that of his progenitors, and keeping in view, not only the very intimate relationship of different nervous diseases in the same individual, but especially the facility with which one organic neurosis passes into another by descent from parent to child.

An organic neurosis is not generally transmitted fully formed from ancestor to posterity. This is not the common, but rather the exceptional experience of observers. To transmit a disease fully formed, the blood should be "touched corruptibly" and this condition, while it may be especially true in zymotic diseases and some other morbid states of the blood, is seldom true of the neuropathic disorders, even though we include cancer* in the latter, unless in those forms of transmitted syphilitic epilepsy, paralysis and insanity, which we not seldom encounter in practice, we choose to give greater prominence to the changed condition of the blood than to the altered states of the nerve cells, in impressing the germinal vesicle of the future being. The physiology and pathology of cell-genesis do not throw upon this subject all the light we need, and for the present we must leave

*I shall take occasion in the future, I hope with more enlarged experimental knowledge, to show that cancer is primarily a disease of the nervous system, and that the local change we call cancer, with the ulceration which caps it, is the equivalent of the change and death of part after complete rest, produced by division of nervous communication. [Paper on Physical Diseases from Mental Strain, by Benj. W. Richardson, M. D., F. R. S., etc. Read before Medical Psychological Association of York, England, August 2nd, 1869.] Some plausibility is given to this view by the fact that men whose brains have been subjected to great mental strain have often died of cancer, for example, Napoleon and our own Benton, and the power of electricity to diminish cancerous growths.

it in the hands of the microscopists; but practical observation of fully developed pathological states, establish quite clearly, in regard to the nervous system, what Mr. Tilbury Fox,† in his recently revised work on skin diseases, concedes, in order to explain the transmission of these affections “independent of any blood state,” that dispositions in tissues to behave in a particular way are transmitted from parent to child.

As there is a tendency to restoration by exfoliation, elimination, resolution, etc., in certain diseases of the osseous, circulatory, and glandular systems, so in the nervous system we often discover an inclination towards a return to healthy states, more or less marked according to the degree of primary involvement of the nerve tissue, though we may also see the same or some kindred neurosis cropping out under circumstances tending to produce a lowered standard of vitality and developing into fully marked and profound disease in the offspring, and sometimes nervous derangement manifests itself in the children of once diseased but apparently recovered parents, even without appreciable exciting cause in the progeny. But this rarely happens.

When recovery has taken place in the parents, we may look for exemption from nervous disorder, under a continued operation upon offspring of those conditions favorable to health, which removed all appearance of disorder in the parent.

There is a tendency in all neuroses either to extinction of race or recovery. In the most profound involvement of the nervous system a loss of procreative power

†Skin Diseases—Their Description, Pathology, Diagnosis and Treatments—by Tilbury Fox, M. D., London, 1873.

either precedes or (fortunately for the physical well-being of humanity) follows the disease.

“Two laws of nature are concerned in the production of the phenomena (the transmitted neuroses). One is, that peculiarities are apt to occur in descendants for many generations; the other, that there is always a tendency to return to the type of health in beings which have sufficient vitality to perpetuate their species and carry on their race for successive generations.*

“We could not breed an insane (or epileptic) family of which all the members should be insane for generations. We should have sterility and extinction, or a return to a healthy type.”

It is also a fact that sometimes none of the children of insane or epileptic parents are either insane or epileptic, or have any of the kindred neurosis, but this rarely happens when the instability of nerve-element possessed by one parent is not atoned for by the counteracting influence of a perfectly stable nervous organization and healthy sanguineous system possessed by the other parent (especially the mother), and even the most perfect soundness of nervous constitution on the part of one parent is not sufficient to ward off the remote manifestations of cerebral or spinal defect in the children or children's children. Nervous diseases like other entailable diseases, may skip a generation and reappear in the remoter descendants. It is doubtless true, that “some children inherit more of the ancestral defect than others,” that is, if we take no account of the probable changes which have taken place during inter-uterine life. They start from the womb unequally endowed with chances for the development on resistance, of nervous disease in after-

*Insanity and its Treatment, by G. Fielding Blandford. p. 134.

life. But the child of an insane father, for example, is seldom born without an inherent organic disposition of the cerebral cells to take on morbid action in some form, under circumstances tending to greatly lower the vitality of the system. This tendency may be modified so that it may never be manifest at all, and may even be entirely obliterated by physiological reconstructive influences operating during embryonic and subsequent existence, through several succeeding generations.

Such a favorable issue of a profound neurosis is probable but not common. The rule is usually the reverse of this. With the approach of advanced life, the change of life in women, the commotions incident to puberty and menstruation in the young, the vitiation of the blood by disease, excessive strain upon the nervous system, especially the brain, from any cause, the original defect becomes manifest, or appears in some allied form capable itself of being transformed into the original disease. Certain diseases of the brain and nervous system below it, even when recovered in the individual, leave behind them neurotic scars not easily obliterated; morbid impresses which mark the organism of the cerebral and spinal cells as certainly, though not yet as visibly, as small pox pits the skin.

I have no doubt, when we shall have become as familiar with the microscopic cells of the grey matter of the brain, ranging as they do from the $\frac{1}{12000}$ th to the $\frac{1}{1000}$ th of an inch in diameter, constituting the ganglionic centres of the seven or eight cortical layers, and with the minute fibres which connect them, as we are with the anatomy, physiology and pathology of some other parts of the body, we shall find changes in their color, consistence, size and shape to account for every form of cere-

bral and so-called mental disease. We have already made great progress in this direction. We know of many definite microscopical changes of the cells of the free surfaces of the cerebrum connected with definite intellectual derangement, and a great deal more than we did a few years ago upon the subject of softening of the cells of the white matter.

In physiological states of the cerebral mass, modifications have been found in the structure of the convolutions. "The convolutions at the end of the posterior lobe are not only marked by the greater distinctness of their laminae, but contain a great number of cells of a much larger kind than usual—peculiar pyramidal cells with quadrangular bases, which give off four or more processes, the opposite end of the cell tapering into a straight process which runs towards the surface, giving off minute branches and becoming lost in the surrounding net-work."

Dr. Maudsley assumes a difference of structure in the cells of the brain, and quotes from M. Lockhart Clark as we have just done to sustain him in the assumption.

The high authority of Schroeder Von DerKolk is appealed to by Dr. Maudsley as sustaining him in the statement that whenever there are differences of function (in the brain) then differences of structure and composition and connection do exist."

This is justified by analogical reasoning, but to Von DerKolk "microscopic investigation has established this in the completest manner."*

What is true of healthy function of cerebral cells is true of morbid action.

* Schroeder Von DerKolk's Pathology and Therapeutics of Insanity, 1863.

Though Leidsdorf has failed to find and does not hope to find definite pathological changes in many mental disorders, he deems it "incumbent upon us to assume that every mental disorder, however it may commence, whether in a simple loss of mental tone, or as fully declared insanity, is founded in organic changes from which the brain suffers, and these changes may commence in it either primarily or secondarily."*

Assuming, therefore, as a fact as clearly proven as any other of the very many facts in pathology, which we have to receive as true without ocular demonstration, that the *nerve-cells* of the cineritious matter of the brain which have once been involved in epileptoid diseases generally undergo a permanent morbid change which endures long after the distinctly recognized disease itself may have passed away, to become the germs of future brain lesion; that each molecule, whether in health or disease, leaves to its succeeding molecule the pathological or physiological impress it has received from its predecessor, more or less modified by circumstances connected with its nutrition, we proceed to cite our cases.

We cite them as typical of many more like them which have fallen under our observation, since leaving the hospital at Fulton.

Case I was a boy aged 11 years, a patient of Dr. N. D. V. Howard. Boy's father was under Dr. Howard's treatment for insanity at the County Insane Asylum. Father is still there under treatment for chronic general mania, the result of hereditary transmitted ten-

*Pathologie und Therapie der Psychischen Krankheiten für Aertze und Studierende bierbitet von Dr. Maximilian Leidsdorf.

dency to insanity as predisposing, and excessive "drinking" as exciting cause.

The knowledge of the father's insanity, which existed in a milder form (as the mother stated), before the boy was conceived, lead to those interrogatories concerning the boy's history which resulted in fixing the diagnosis.

The principal trouble with which the boy suffered while under Dr. Howard's treatment was a recurring headache which was always promptly relieved by bromide of potassium.

The headaches have ceased to recur as frequently as heretofore, but a change in the boy's disposition has become manifest. He has grown more irritable and violent than formerly, impatient of the usual restraint and gets angry without cause. Remarks heretofore not disagreeable to him now irritate him. Gets angry with his brothers and strikes them without cause, and when asked why, answers, "he could not help it." Parental chastisements and restraints have proved unavailing to change his disposition, and the mother had concluded before we saw the boy that "he could not help doing as he does" and suspected "something wrong with his head," in which suspicion Dr. Howard and myself both concurred.

More of this boy's present peculiarities might be given, but to avoid tedious detail let it suffice to say that the *tout ensemble* of his symptoms indicate that as compared with himself quite recently the boy is not like his usual self. The transition in his character has been too sudden, and the circumstances under which he displays his "fits of temper" too unnatural to be due to unresisted immoral influences alone acting on a perfectly healthy brain, and the boy's surroundings are not bad.

Now let us inquire into the boy's antecedent history. About four years ago after an attack of measles he became a somnambulist for awhile, getting up and leaving the house while asleep—after this phenomena ceased, "he would at certain times of the night scream out and be all in a tremor as if he was frightened," but when his mother would go to him she found him usually unconscious, and he would fall again into quiet sleep as if nothing had happened.

These symptoms gave place to wakefulness long before day, and sometimes as early as 2 A. M., when he would often get up, saying he could not sleep.

After the subsidence of these nocturnal evidences of cerebral irritation the periodical headaches recurring about every three weeks in the day time came on, and now though the headaches are diminished in frequency and painfulness, the irritability of brain and inherited unstability of nerve-element are manifest in his changed disposition and the explosive paroxysms of unrestrainable and causeless passion.

That great observer Esquirol, in his classical work on insanity, (pages 57 and 58) suspected the existence of epilepsy in children, especially if the father and mother had been similarly affected, "if the child's sleep was interrupted with reveries" or if he was seized without cause.

✓ with fear

This boy should live on a therapeutic regimen of ferro-cyanide of iron, pyrophosphite of iron, and bromide of potassium judiciously blended with his daily nutrition from his childhood up to manhood. With this course and the timely use of muriate of ammonia, Fowler's solution, atropine, and other remedies to control the nerve-centres, which may suggest themselves to

Dr. Howard, who is a skillful physician, the patient may be conducted safely between the sylla of impending insanity on the one hand, and the Charybdis of confirmed epilepsy on the other, but the chances are, that under the best of management, before his brain shall have borne the real burdens of the probably trying⁴ life before him, his destiny will have been sealed by an order of commitment to the place where his unfortunate father abides with reason dethroned.

This is a sadly interesting case, and typical of a large class of brain disorder in children which fall under the eye of the physician, even when the parents are not suspicious of the gravity of the brain lesion with which the physician has to deal. To the physician, it is illustrative of the tenacity with which morbid states of the cerebral cells cling to offspring, growing with the growth later into one or the other of the profound neuroses.

The next case is like unto the preceding, only in showing the hereditary consequences of insanity. It was an idiotic child, and a patient of Dr. Gericke. Age five years. Cranial development, irregular, but not smaller than normal size for a child of that age. Expression of the face intelligent. The child comprehends few signs, and makes known a few wants. Indicates by signs a desire to go to stool, and has a preference for particular articles of diet—generally eats but one article of food at a meal. Keeps in constant motion, and climbs up into the windows and other high places, and has other peculiarities of idiotic children not necessary to mention.

Appeared to the mother like other children while nursing. At about nine months, well-marked epileptic symptoms appeared, the epilepsia continuing until about two years ago.

Insanity and paralysis existed in family of grand parents, and the nervous organization of the father is restless and unstable.

We did not promise that much could be done for this case. Obviously, the only course rationally to be pursued would be to endeavor to reconstruct by means of the phosphates and other reconstructive neurotics, the hæmatic tonics and an out-door life, the degenerate nervous organization of the child, and to diminish the irregular disintegration of the ganglionic centres by the bromides regularly given, chloral and quinine at times, the muriate of ammonia, etc. Such a course of treatment pursued along with the simultaneous training of a school for idiotic and feeble-minded children might materially improve the child's nervous organization so as to render her more capable as she grows up, of taking care of her physical wants. Improvement is more possible in the involuntary nerve-centres of reflex action, than in the higher centres of the brain, but no course of treatment or training will ever restore to such a child (what it never inherited the germ of) a perfectly stable nervous system, and I have nothing to add to the common experience that intellectual darkness is the miserable doom of this case, as of all similar cases, through the inherited tyranny of a bad organization.

The last case was one of Dr. Laidley's patients. Aged between 35 and 40 years, an active, energetic business man, the financial manager of a large establishment, upon whom devolves great anxiety and heavy responsibility. Has been an army officer, educated for a lawyer, and unmarried. Has used spirits and tobacco largely but not an inebriate. These and other excesses*

* Venery and venereal.

and influences tending to deprave the blood and depress the nerve-centres, lowered his nervous tone to such a degree, that, about the close of the war, they culminated in slight vertiginous sensations which have steadily increased in frequency, and somewhat in force. Has never yet fallen down. On one occasion he signed a check without knowing it, and has done some other unconscious things during these paroxysms.

His memory has become considerably impaired, and his intellect, to one familiar with the physiognomy of mental derangement, has evidently suffered. He has been a man of greater mental force and sounder mental parts than now. He has exophthalmic goitre. His sleep is shorter in duration than it should be, wakes at from two to four o'clock in the morning, and can sleep no more until the succeeding night. Forty to sixty grain doses of bromide of potassium, given in a glass of water on awakening, prolongs his sleep until seven or eight o'clock in the morning, and maintains the brain in a condition unfavorable to disintegration, and of course to the mental activity so intimately connected therewith, during the greater part of the following day.

The staggering gait and eruption of bromism soon appeared in this case, and much smaller doses than the above will suffice.

In regard to the exophthalmic goitre which existed in this case, we will here say, in parenthesis, that we have before observed this morbid external phenomena accompanying other similar cases, and in disease of the cerebrum with greater mental impairment and have noted its subsidence simultaneously with an abatement or improvement of the cerebral affection, as Dr. Laidley informs me is now taking place with this case.

We have never made any post-mortems to ascertain if a pathological state of the cervical ganglia of the sympathetic existed, or if the heart were hypertrophied in these cases, but we have occasionally found quite satisfactory evidence of cardiac enlargement in the living patient. Hypertrophy is found in more cases of cerebral diseases when no such goitre exists, therefore we can neither affirm nor deny what Virchow* has said on this subject, namely, that hypertrophy of the heart is characteristic of an advanced stage of exophthalmic goitre.

In this case no cardiac hypertrophy was appreciable.

In regard to the cause of the exophthalmos in this case, we have no hesitancy in giving it as our opinion that it, too, is due to a pathological condition of the nervous system both of the brain and sympathetic, and we hope to be able at another time to confirm this opinion by satisfactory evidence.

Our object in this paper is not to speak of treatment or *modus operandi* of remedies in these cases. The paper will, perhaps, prove too long without them. We may say in passing, however, that we advised the patient's withdrawal from business, a change of latitude, and complete mental relaxation, and cheerful surroundings. The shaping of the patient's financial affairs so as to be provided for the possible result of insanity. He was not informed that insanity was probable or imminent, but possible, in order that he might be induced to make every necessary sacrifice to ward off the usual result in these cases. Few diseases lead more certainly to hopeless insanity or dementia than unarrested epilepsy.

* Die Krankhaften Geschwülste, B. III. p. 76.

The Doctor has employed the bromide with the result of a suspension of all symptoms for about three months.

The patient is now using Brown-Séquard's * combination of the bromides before meals and the ferro-cyanide of iron three times a day, in ten to twenty grain doses in syrup pruni Virginiana after meals. The muriate of ammonia, pyrophosphite of iron, chloral and hypodermic injections of atropine will be resorted to if the necessity of a change to control the nerve-centres should appear, after the patient shall have placed himself in the most favorable condition for restoration.

This patient inherits a tendency to nervous disorders from his mother, who had epilepsy, but might have escaped in consequence of his finely developed physical organization, and a rich fund of vitality bequeathed by his father, had it not been for the combination of depressing influences which have operated upon him from his youth up. With all the other sources of mental strain he added, that of a "haste to be rich." He has succeeded in "making money," but has expended more nerve-force in its acquisition than he had to spare, and an inherent defect of nerve-element, which might have remained dormant, develops into morbid activity, in consequence of this, conjoined with the other causes mentioned.

The ganglionic centres of the nervous system re-

* R	Potass. Iodidi,	ʒi.
	Potass. Bromide,	ʒi.
	Ammonizæ Bromidi,	ʒiiss.
	Potass. Bi-carb,	ʒii.
	Infus. Columbæ,	ʒvi.

M. ʒi before each meal, ʒiii at bed time. Continue 1 ½ years after attacks cease.—*Brown-Séquard.*

member and transmit in structural change to their successors in the brain and cord the physiological and pathological impressions made upon them, otherwise physical impressions could not be continued, unless continually renewed, longer than the life of the cells immediately impressed. Impressions would cease with the retrograde metamorphosis of the cells into their organic constituents, preparatory to their elimination from the body. There is the remembrance of impression in structural change, (though we can not now always discover it in the complex structure of the organ of our mental operations,) in every tissue of the body. "The virus of small-pox makes its mark on the constitution for the rest of life. We may forget it, but it will not forget us, though, like the memory of an old man, it may fade and become faint with advancing age." The taint of scrofula, or cancer, or syphilis, or other organic disease, is no less certainly remembered and reproduced in structural change in the organic constitutions of children and children's children than the altered brain and nerve cells of the maniac, the epileptic and the paralytic.

"As the nature of man has been slowly developed into that which it now is by a progressive fashioning through generations, so, by a retrograde descent, may it pass backward to a lower stage—the degeneration which the individual who becomes insane without having any predisposition to insanity represents, may observably become the inherent defect or taint of the nervous element of the progeny, so that the acquired, or as it were accidental, irregularity of the parent, determines a natural to irregular, perverse and discordant acts in the offspring. The progress of organic devel-

opment through the ages is a progressive internal specialization in relation to external nature; the human organism as the highest organic development has the most special and complex relations with the external; and the highest mental development as the supreme development of the human organization represents the completest expression of the most special and complex harmony between man and nature. Now this harmony will plainly be destroyed and a discord produced instead, by that inherent defect of nervous element which an hereditary taint implies; for it implies a predisposition to discordant action." Accordingly there is witnessed in the infant (as we have seen in the second case), "long before any responsibility attaches to its acts, either a congenital inability to respond to external impressions, whereby idiocy of greater or less degree is the consequence, or a degenerate state of nervous element (as in Case I), whereby the natural assimilation of impressions and the fitting reaction to them are seriously interfered with."*

The first case recalls to our mind an interesting chapter "on night terrors in children," in one of Dr. Chas. West's lectures† "on the diseases of infancy and childhood," in which he enjoins the watching of a child in whom they frequently occur lest they might "issue in serious disease," but he nowhere intimates a suspicion that these night terrors in children might proceed from serious, but obscure *cérébral* disorder.

Headache, as we see it in our first case, is also a marked symptom in all the cases of mental disorder in children given by the same excellent authority.

* Maudsley.

† Lecture xvi, Amer. Ed. 1860.

Dr. West was fully alive, however, to the importance of treating as disease, cases like our first one. It was his opinion "that practitioners in general had not their attention sufficiently alive to some of these forms of mental disorder. * * * * They are passed by as anomalies, painful instances of extreme badness, or of ungovernable temper, or of strange oddity about the child, from the study of which there is nothing to be learned, and for its remedy nothing to be suggested," and he believed many of them to be "instances of a kind of *mental* disorder especially liable to issue in confirmed insanity" and "would always watch those cases of extremely bad disposition, of ungovernable stubbornness, or unmanageable fury," and, as we might expect of so high an authority, he was certainly correct. Such symptoms are among the chief manifestations of affective insanity in childhood.

Our cases suggest important medico-legal considerations, and considerations in regard to what symptoms ought to constitute the distinctive characteristic of *le petit mal et le haut mal*, also some reflections upon the pathology of epileptic and epileptoid disease, which, like the treatment of these cases in detail, on account of the already too great length of our paper, we postpone to another time. For the same reason we omit also the remarks on the relationship between tuberculosis and insanity, with which this paper concluded.

